

Methods and Systems for Transmitting Digital Messages

Digital communication schemes using chaotic signals as carriers can be broadly classified into two categories. In the first category, the chaotic signals carrying the information have to be synchronously regenerated at the receiver, which
5 may be applicable to low noise environment. The second category requires no synchronous regeneration of the carrying chaotic signals in the receiver. An example of the second category utilizes a specific bit structure, which may not be able to resist unintended reception because the fabricated bit structure can be relatively easily detected. This invention involves systems and methods for
10 transmitting digital messages modulated as chaotic signals, and the demodulation methods. One individual chaotic signal generator having a specific chaotic characteristic value is responsible for generating a chaotic signal for each possible value of the digital message according to a chaotic algorithm. The chaotic signal is then transmitted to the receiver, which stores all of chaotic characteristic values and
15 a decoding algorithm. The chaotic signal received at the receiver is then demodulated by evaluating its chaotic characteristic value and matching with the stored chaotic characteristic values.